

CLAIM AMENDMENTS

1. (Original) A communication diode driver circuit (CDDC) for selectively illuminating at least one communication diode (CD) in response to incoming digital data pulses, the communication diode driver circuit comprising: at least one Communication Light Emitting Circuit (CLEC) having a Communication Light Emitting Branch (CLEB) with at least one CD, and designed to drive said CLEB at a nominal LED drive current I_N for selectively illuminating said at least one CD, each CLEC of said at least one CLEC including a driver unit for combining a pulsed analog data voltage $ADV(t)$ corresponding to the incoming digital data pulses, and a variable shift voltage $SV(t)$ for issuing a pulsed drive voltage $DV(t)$ for driving said CLEB with a pulsed LED drive current $I_{sub.LED}(t)$ for selectively illuminating said at least one CD in accordance with the incoming digital data pulses, and each CLEC of said at least one said CLEC including a closed loop feedback unit for tapping said CLEB for continuously monitoring a pulsed monitor voltage $MV(t)$ directly proportional to said LED drive current $I_{sub.LED}(t)$ for increasing said shift voltage $SV(t)$ up to a maximum shift voltage $SV_{sub.max}$ less than a threshold drive voltage for continuously illuminating said at least one CD after a long absence of incoming digital data pulses, except for intermittently stepwise decreasing said shift voltage $SV(t)$ in response to each single incoming digital data pulse contributing to a LED drive current satisfying the condition $I_{sub.LED}(t) > I_{sub.N}$.

2. (Original) The circuit according to claim 1 wherein said feedback unit includes a toggle unit having a comparator for comparing a feedback voltage $FV(t)$ derived from said monitor voltage $MV(t)$ with a reference voltage $V_{sub.REF}$ proportional to the nominal LED drive current $I_{sub.N}$ for outputting a an ON digital control state on the condition $I_{sub.LED}(t) < I_{sub.N}$, and an opposite OFF digital control state in response to each single incoming digital data pulse contributing to a LED drive current satisfying the condition $I_{sub.LED}(t) > I_{sub.N}$.

3. (Original) The circuit according to claim 2 wherein said toggle unit further includes a low pass filter (LPF) for shaping generally rectangular shaped pulses of said monitor voltage $MV(t)$ to generally triangular shaped voltage pulses for determining the duration that said toggle unit issues said opposite digital control states on the condition $I_{sub.LED}(t) > I_{sub.N}$.

4. (Previously presented) The circuit according to claim 1 wherein said feedback unit includes an integrating unit with a memory device for providing said shift voltage $SV(t)$ wherein said memory device includes a memory component for continuously increasing said shift voltage $SV(t)$ on the condition $I_{sub.LED}(t) < I_{sub.N}$.

5. (Original) The circuit according to claim 4 wherein said memory component is a capacitive memory component.

6. (Original) The circuit according to claim 5 wherein said memory device includes a resistive memory component for selectively discharging said capacitive memory component on the condition $I_{sub.LED}(t) > I_{sub.N}$.

7. (Previously presented) The circuit according to claim 1 wherein said driver unit includes a shift amplifier for algebraically superimposing said analog data voltage $ADV(t)$ and said shift voltage $SV(t)$.

8. (Previously presented) The circuit according to claim 1 wherein said CLEB includes a sense resistor tied to ground and said toggle unit taps said sense resistor for continuously monitoring said monitor voltage $MV(t)$.